

HUMAN BLOOD UTILIZATION IN THE NEW YORK-NEW JERSEY METROPOLITAN AREA

A REPORT OF THE SUBCOMMITTEE ON HUMAN BLOOD UTILIZATION OF
THE COMMITTEE ON PUBLIC HEALTH*

IN 1958 the New York Academy of Medicine's Committee on Public Health published the report of its Subcommittee on Blood survey on the procurement, distribution, and utilization of human blood in New York City.† This report documented the disarray and disunity among the providers of blood and decried the inadequacy and unreliability of supply. The inadequacy of supply from such volunteer sources as the Red Cross and hospitals caused the proliferation of commercial enterprises which depended on paid donors from the most disadvantaged socioeconomic groups. The Subcommittee presented a series of recommendations at the conclusion of the report. Twenty years later the Committee on Public Health appointed another subcommittee to evaluate progress in the achievement of the goals set in 1958.

REVIEW OF ACCOMPLISHMENTS SINCE THE 1958 REPORT

In accordance with the recommendations, in 1963 a Community Blood Council was formed "organizing on a permanent basis a community body concerned with blood." This body initially included those organizations which prompted the original study and was extended later to be more representative of the community (Recommendation 1‡). In 1969 the Community Blood Council joined with the Red Cross to form the Greater New York Blood Program. This permitted the formation of a central agency for "ascertaining the community's need for adequate blood and its potential supply" (Recommendations 2, 3) and maintaining an "inventory" (Recommendation 4) of blood available, and to gather information on blood used. An outstanding research program has been developed which has achieved national and international renown and which is essential for

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†Committee on Public Health, the New York Academy of Medicine: Human Blood In New York City. A Study Of Its Procurement, Distribution And Utilization. *Bull. N.Y. Acad. Med.* 34:408, 1958.

‡This and other recommendations indicated refer to those published in the 1958 report as listed in the Addendum.

attracting high caliber personnel to the Blood Center. As a function of the largest community blood bank in the world, the research program has provided new methodology in blood component preparation, quality control, including control of infection, and computerization of distribution. The Greater New York Blood Program, in cooperation with a number of hospitals, also developed an excellent training program for physician directors of blood banks.

Although the Community Blood Bank (the operating unit of the Blood Center) started slowly, it now supplies most of the region's needs (Recommendations 7, 8, 9), thereby making maintenance of central registries of professional donors unnecessary (Recommendation 6). Since fees are no longer paid, there is no need for their standardization (Recommendation 13).

During the last 20 years, national associations, such as the American Association of Blood Banks and the Bureau of Biologics of the Food and Drug Administration, as well as Departments of Health of New York State and City, have established formal standards to protect donors and recipients. Recommendations 12, 14-31, and 48-57 addressed these problems which, in the opinion of the Subcommittee, have essentially been solved and are, therefore, no longer pertinent. Similarly, the New York Blood Center and its affiliated hospital blood banks have adopted standard blood-handling and record-keeping procedures, thus accomplishing the goals of Recommendations 39 and 41-45. Most hospitals have adopted a single processing fee equal to that charged by the Community Blood Bank, thereby standardizing billing procedures as proposed in Recommendations 32-35.

In an attempt to develop a closer link between suppliers and consumers of blood and blood products, the Long Island Blood Resources Association was conceived and implemented (in 1976) for testing in the area served by the Long Island Blood Services division of the Greater New York Blood Program. It was established as a model for participation by representatives of these groups in a regional blood system. Close working arrangements between member hospitals and the major supplier of blood on Long Island is a prominent feature of the model. The Long Island Blood Resources Association model has been modified because of continually changing regulations at the federal level.

In essence, the Long Island Blood Resources Association encourages and facilitates participation of the members of the Blood Bank Community and the public in the appropriate development of donor resources, utiliza-

tion of blood in the Long Island area, and education of the several groups involved. It does this by the establishment of working committees of dedicated members selected to represent the various concerned groups and chosen by them. All members of this Association are kept informed of the activities and actions of the committees through extensive minutes. Open meetings are also held. The impact of improved communication between professional blood bankers of the hospital blood banks and the Long Island Blood Services (Division of the Greater New York Blood Program) is already being seen and may serve as a model of regionalization in the entire Greater New York area as well as across the country.

PRIORITY ISSUES

The establishment of the Greater New York Blood Program was the initial step in achieving an essential community resource for blood. In order now to achieve full cooperation in the area, it is necessary to develop a more effective interaction with the regional community. This includes a need for:

- 1) Increased interchange between professionals in the area concerning policies relating to regional blood supplies, utilization (Recommendations 36, 53, and 58), and shortages (Recommendation 59)
- 2) Improved coordination of donor recruitment and collection in the area (Recommendations 5 and 7)
- 3) A mechanism to evaluate and resolve problems and complaints (Recommendation 7)
- 4) Consideration of extension of training programs in blood banking services to other levels in addition to directors (Recommendation 37)
- 5) Evaluation of costs for activities related to the provision of blood and blood products and the development of uniform charges (Recommendations 46 and 60).

Advances in blood banking services, both in immunohematology and the technical procedures for component production, have introduced new areas of importance for the establishment of standards of practice and performance in the community. These include new methods of cell preservation, the provision of single donor products acquired by machine pheresis, the performance of therapeutic pheresis procedures, and the establishment of files of tissue-typed donors. These areas, as well as those noted above, are worthy of additional study and require coordinated attention in the region.

RECOMMENDATIONS FOR THE FUTURE

Extension of communication between hospital blood banks and the Regional Blood Center in decision-making areas is required if the needs of the community for human blood are to be met and appropriate management of this important resource is to be achieved. The policies of the region must reflect the philosophies and meet the needs of concerned groups. The technologies which are utilized and the products which are available must be professionally acceptable. To create a regional system which fully serves the communities' needs, a rational and workable coordinating mechanism is required.

To achieve this goal the Subcommittee will develop a model for the formation of a regional system of blood services. This system might be an extension of the Long Island Blood Resources Association model to the other areas served by the Regional Center. The needs of the region for human blood will be evaluated and monitored.

It is envisioned that the regional organization would concern itself with the following issues:

- 1) Areas of public concern relating to the donating public and the transfused patient

- 2) The technical and professional services rendered to the transfusion services by the regional center and by the transfusion services to the patient

- 3) The problem of supply of blood and components, especially the documentation of shortfalls and the development of innovative cooperative approaches to help reduce or eliminate the prolongation of hospitalizations because of postponements of surgery. New technologies and alternative sources of blood, including autologous sources, would be examined for their appropriateness and applicability.

- 4) Problems of utilization and unnecessary transfusion, including the determination of present practices. The development of recommendations for more efficacious future use would be a charge to the organization.

- 5) Human manpower resources would also be examined. There has been substantial progress in training of blood bank directors. The need for upgrading technical and administrative personnel should be examined and recommendations developed for implementing programs. Joint programs would be developed between the regional blood center, the hospitals, and educational institutions to serve the needs which are identified.

- 6) The costs for collection and processing of blood and providing

necessary services should be examined. Costs which should be studied include those due to around-the-clock service, the maintenance of availability of all components, and the provision of essential sophisticated services such as white blood cell typing, antibody identification, and pheresis for collection of donor blood and therapy of patients. The expenses of maintaining hospital donor facilities in an urban environment and the benefits therefrom should also be studied. This information would be developed via a joint effort between the Greater New York Blood Program, Blue Cross, and the hospitals, and would include examination of the impact of cooperative use of regional resources.

The deliberations on this system and its implementation will require input from representatives of the following groups: Greater New York Blood Program, physicians, hospital blood bank and transfusion service directors, technologists, Blue Cross/Blue Shield and other third-party payers, administrators, and members of the community. The Subcommittee recommends that it pursue its work to develop final recommendations for the configuration of a regional system to address the issues noted above. Such an association, since it would be dedicated to addressing the issues of mutual concern to the regional center, the hospitals, and the public, would be a major step forward toward solving the central problem identified by the Subcommittee—the need to integrate all aspects of blood services in this area into a working unit.

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Addendum

1958 RECOMMENDATIONS*

Recommendations 1-38 concern the proposed establishment of a community blood center and outline specific areas of responsibility for such an agency as follows:

- 1) All of the blood-handling agencies in New York City which requested the present survey and participated in it formally organize on a permanent basis a community body concerned with blood.
- 2) The community blood organization set up and operate a community blood center.
- 3) Ascertainment of the community's need for blood and the potential supply.
- 4) Installation of an overall communitywide inventory of blood by group and type and an overall community record of blood used by group and type.
- 5) Coordination of donor recruitment by means of promotional appeals and campaigns conducted according to a plan.
- 6) Maintenance of a central registry of professional donors.
- 7) Coordination of the collection of blood.
- 8) Handling of emergencies and interagency transactions for which no

*Excerpted from Committee on Public Health, the New York Academy of Medicine: Human Blood in New York City. A Study of its Procurement, Distribution, and Utilization. *Bull. N.Y. Acad. Med.* 34:408, 1958.

mechanism now exists such as keeping balanced stock, providing rare types of blood, distributing oversupply, and transferring blood that is approaching the expiration of the 21-day limit.

9) Coordination of the distribution of blood.

10) Becoming a local clearinghouse for blood credits in cooperation with whatever national credit system is ultimately established.

11) Establishment of a bureau for complaints.

12) Standards for selection of donors.

13) A standard fee for donors.

14) Standard physical examinations and history-taking for donors, together with serological and any special tests needed.

15) A standard procedure for the collection of blood.

16) A standard procedure for the processing of blood, preferably adoption of the recommendations of the Joint Blood Council.

17) A standard labelling system to be used by all for identifying blood and blood products, with the label as a part of a tamper-proof seal.

18) A standard procedure for storage of blood by the collecting agency.

19) Standard record forms relating to collection, processing, and storage of blood for use by collecting and processing agencies.

20) Standard procedures for the inspection of returned blood.

21) A standard form for recording the results of examination of returned blood.

22) Formulate a uniform policy for the distribution of blood and urge its adoption by all member agencies.

23) Develop standard procedures for the transportation of blood, both within the city and to distant points.

24) Develop standard procedures for storage and intramural transport by users of blood, including a standard and uniform standby and reserve policy.

25) Develop standard pretransfusion procedures to be applied to patients and improved compatibility tests, preferably with adoption of the recommendations of the Joint Blood Council on crossmatching tests.

26) Prepare standard forms for the recording of the results of cross-matching tests.

27) Enunciate a policy as to who should be authorized to administer transfusions.

28) Prepare standard forms for records of blood used, classified by group, type, and source.

29) Develop a regular procedure to be followed by the original processor of blood in cases of transfusion reaction to include tests on both the recipient's blood and the blood used.

30) Design record forms for transfusion reactions.

31) Maintain records of transfusion reactions in the community blood center.

32) Set a standard replacement ratio.

33) Develop standard exchange and credit systems.

34) Develop a standard system of charges for blood and the services incident to transfusion, and set a maximum charge.

35) Formulate a uniform system of billing by hospitals for blood and transfusion services, and encourage its adoption.

36) Conducting education campaigns against such abuses as unnecessary use of blood, directed to physicians on the one hand and the public on the other.

37) Devising methods for recruitment and fostering programs for training of laboratory technicians in the field of hematology.

38) Stimulating or conducting research or studies in blood activities covering the various levels of operation; for example, a study to ascertain the best methods of attracting donors.

Recommendations 39-46 were addressed to the collecting and distributing agencies.

39) Adopting the applicable policies, practices, techniques, and record systems recommended by the community blood center in the interest of uniformity and standardization of operations.

40) Conducting a donor-recruiting program best adapted to the nature of the agency, yet consonant with the overall community campaign.

41) Maintaining a daily inventory of blood.

42) Maintaining weekly, monthly, and yearly records, both individually and cumulatively, of collected blood, by group, type, and source.

43) Maintaining daily, weekly, monthly, and yearly records of blood distributed, classified by method, namely, issue, exchange, credit, or sale.

44) Conducting investigations of transfusion reactions by regular procedures recommended by the community blood organization and informing the user of the results.

45) Maintaining records of blood both discarded and salvaged.

46) Conducting a study of the economics of production so as to arrive at uniform charges for processed blood.

Hospitals, as the chief users of blood and blood derivatives, were offered guidelines in Recommendations 47-60.

47) Adopting the policies, practices, techniques, and record-keeping systems recommended by the community blood center in the interest of uniformity and standardization of operations.

48) Conferring administrative responsibilities and authority on the clinical pathologist in charge of the blood supply, in addition to his function as a technical expert.

49) Maintaining adequate facilities for safe intramural storage and transport of blood.

50) Maintaining operational records on storage of blood.

51) Adopting a uniform and standard pattern for pretransfusion examination of patients and uniform and standard cross-matching tests.

52) Adopting standard record forms for recording the results of the pretransfusion examination of the patient and of the cross-matching tests.

53) Adopting reservation and stand-by policies as recommended by the community blood center.

54) Maintaining uniform daily, weekly, monthly, and yearly records of blood used and stock on hand on a form recommended by the community blood center.

55) Maintaining records of reactions on a form recommended by the community blood center.

56) Providing a mechanism for informing the clinical pathologist of the hospital about every reaction and for reporting such reaction to the central agency. If the original processor is an outside agency, the user should make available to the original processor such samples of the patient's blood as are needed for investigation and should report the reaction, together with results of the investigation, to the community blood center.

57) Providing for adequately qualified technical help on nights, weekends, and holidays for the purpose of performing pretransfusion and cross-matching tests.

58) That hospitals exercise constant surveillance and adopt such measures as are necessary to ensure that blood is not being unnecessarily used.

59) That hospitals maintain a record of blood needed but unavailable and of surgical procedures delayed for that reason.

60) Individual hospitals should work with the community blood organization to evolve a uniform schedule of charges with the setting of a maximum and a standard system of billing the patient.